Instructional Materials Analysis and Selection

Phase 3: Assessing Content Alignment to the Common Core State Standards for Mathematics

Traditional Pathway for High School: Algebra I

Instructional Materials Analysis and Selection

Phase 3:
Assessing Content Alignment to the Common Core State Standards for Mathematics

Instructional Materials Analysis and Selection
Assessing Content Alignment to the Common Core State Standards for Mathematics

This tool provides educators with a structured way to make informed decisions when selecting mathematics instructional materials. In particular, it can help you become more knowledgeable about the *Common Core State Standards for Mathematics* so you can select instructional materials aligned with these standards.

This resource can also be used with the Dana Center's larger 4-phase *Instructional Materials Analysis and Selection* toolset: Phase 1: *Studying the Standards*, Phase 2: *Narrowing the Field of Instructional Materials*, Phase 3: *Assessing Subject-Area Content Alignment*, and Phase 4: *Assessing Vertical Alignment of Instructional Materials*. The particular resource you hold is a phase 3 tool that has been customized for assessing the alignment of instructional materials with the *Common Core State Standards for Mathematics*. Note that in 2009, the Dana Center developed a similar tool for Indiana educators to use in analyzing the alignment of instructional materials to Indiana's *Academic Standards for Mathematics.*

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About the development of this resource

This tool, *Instructional Materials Analysis and Selection: Assessing Content Alignment to the Common Core State Standards for Mathematics*, draws on the Dana Center's nearly 20 years of experience in strengthening education and has been used extensively in Texas and, increasingly, other states, to help local school districts and schools select instructional materials aligned with their standards. Development and production of the Instructional Materials Analysis toolset was supported by the Charles A. Dana Center.

This resource consists of a set of 15 individual grade-level / course documents that span kindergarten through the third year of high school mathematics. There is a document for each grade from kindergarten through 8, and six documents for high school mathematics (one each for the three courses in the traditional high school pathway Algebra I, Geometry, Algebra II; and one each for the three courses in the integrated high school pathway Mathematics I, Mathematics II, and Mathematics III).[*] At the request of various states and other entities, the Dana Center has populated this *Instructional Materials Analysis and Selection* tool with standards from the *Common Core State Standards for Mathematics* for use by local districts in selecting instructional materials aligned with these standards.

Note that the copyright of the *Common Core State Standards for Mathematics* is held by the National Governors Association Center for Best Practices and the Council of Chief State School Officers (collectively, NGA Center/CCSSO). This use of the CCSS for Mathematics is done under the CCSS Terms of Use, available at www.corestandards.org/terms-of-use. Specifically, this work is done under the Terms of Use "non-exclusive, royalty-free license to copy, publish, distribute, and display the Common Core State Standards for non-commercial purposes that support the Common Core State Standards Initiative." For a complete copy of the *Common Core State Standards for Mathematics* as well as the *CCSS for Mathematics, Appendix A: Designing high school mathematics courses based on the Common Core State Standards,* go to **www.corestandards.org/the-standards**.

October 2010 release.

We welcome your comments and suggestions for improvements—please send to **dana-txshop@utlists.utexas.edu** or the address in the copyright section above.

About the Charles A. Dana Center at The University of Texas at Austin

The Dana Center works to raise student achievement in K–16 mathematics and science, especially for historically underserved populations. We do so by providing direct service to school districts and institutions of higher education; to local, state, and national education leaders; and to agencies, nonprofits, and professional organizations concerned with strengthening American education.

The Center was founded in 1991 at The University of Texas at Austin. We carry out our work by supporting high standards and building system capacity; collaborating with key state and national organizations to address emerging issues; creating and delivering professional supports for educators and education leaders; and writing and publishing education resources, including student supports. Our staff of more than 60 has worked with dozens of school systems in nearly 20 states and with 90 percent of Texas's more than 1,000 school districts. We are committed to ensuring that the accident of where a child attends school does not limit the academic opportunities he or she can pursue.

For more information about our programs and resources, see our homepage at **www.utdanacenter.org.** To access our resources (many of them free), see our products index at **www.utdanacenter.org/products.** And to learn more about our professional development—and sign up online—go to **www.utdanacenter.org/pd**.

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[*] For the high school course sequences, we relied on the *Common Core State Standards Mathematics Appendix A: Designing High School Mathematics Courses Based on the Common Core State Standards*, developed for the CCSS initiative by Achieve, Inc., which convened and managed the Achieve Pathways Group.

Acknowledgments

Unless otherwise noted, all staff listed here are affiliated with the Dana Center.

Table of contents

Introduction

Phase 1:   **Studying the Standards**

Phase 2:   **Narrowing the Field of Instructional Materials**

Phase 3:   **Assessing Mathematical Content Alignment**

The purpose of Phase 3: Assessing Mathematical Content Alignment is to determine the degree to which the materials are aligned to the standards (content and processes). In Phase 3, participants conduct an in-depth review of the 2-3 instructional materials selected in Phase 2. The Phase 3 process requires selection committee members to use set criteria in order to determine a rating for each sample, to cite examples to justify their score for each sample, and to document standards that are missing or not well-developed in the instructional materials examined.

Implementation

As a whole group, selection committee members should practice applying the Phase 3 rubric. The purpose of the whole group practice is to promote inter-rater reliability and calibration.

In Phase 3 it is not important to analyze every page, section, or chapter of a resource. It is important to identify an area, topic, or big idea for the deep content analysis of Phase 3 (e.g. development of equivalent fractions, addition of whole numbers, development of proportionality…). The identified area, topic, or big idea will be used for all the instructional materials considered in Phase 3. The area, topic, or big idea can be identified through the use of student achievement data, curriculum priorities/challenges, or ideas that typically make up a greater portion of instruction in particular grade levels/courses. In most cases, Phase 3 will identify the one resource that is best aligned.

Step-by-Step Instructions

1. Use your current adoption to practice using the Phase 3 rubric. Select one big idea to focus your analysis (see note above for selecting the area, topic, or big idea).

2. Independently, committee members use their current resource, the identified big idea (and associated pages in that resource), and the Phase 3 rubric to score and document the extent to which the material (content and processes) aligns to the standards.

3. In small groups, committee members share their scoring and justifications. Small groups come to consensus on how the current resource would score on this big idea.

4. Each small group shares with the large group their score. Repeat the consensus building to generate a large group score on this big idea.

5. Clarify any misunderstandings about how to apply the rubric before committee members begin to use Phase 3 rubric on the selected materials.
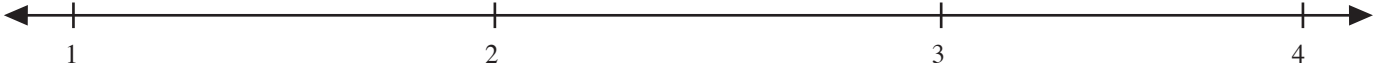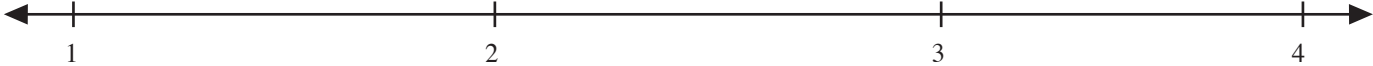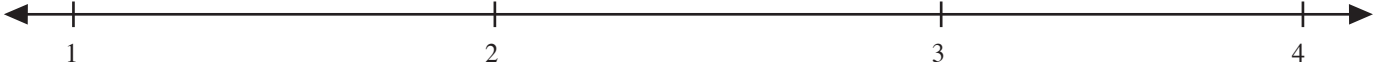
6. Based on the size of the selection committee, determine the number of areas, topics, or big ideas to be examined for each grade/course. If the group size is large, more areas, topics, big ideas can be examined within each grade level/course.

7. Make sure committee members have multiple copies of the Phase 3 rubric.

8. Committee members apply the Phase 3 rubric for each of the materials.

9. Establish a time line for groups to complete and submit Phase 3 documentation.

10. Establish a data collection and analysis process to attain a rating for each resource.

Materials and Supplies

- Phase 3: Assessing Mathematical Content Alignment black line master — multiple copies per person
- Currently used instructional resource
- The 2 to 4 instructional materials selected in Phase 2

Phase 4:   Assessing Vertical Alignment of Instructional Materials
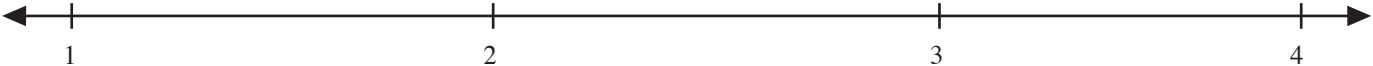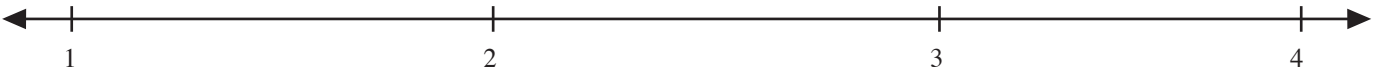
Important Mathematical Ideas:
Understanding the scoring

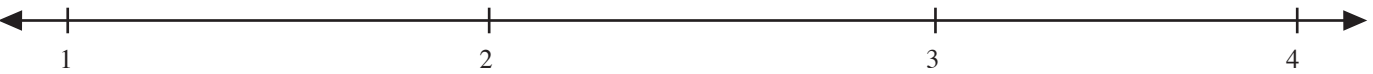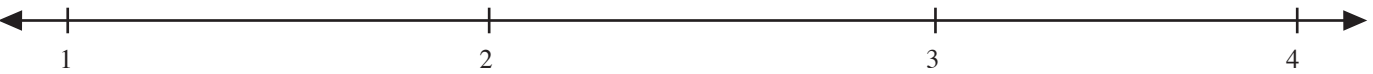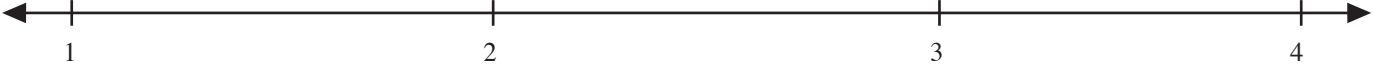|	Superficially Developed			Well Developed

Development

1   2   3   4

Important mathematical ideas are alluded to simply or are missing, approached primarily from a skill level, or provided for students outside any context.

Important mathematical ideas are evident, conceptually developed, and emerge within the context of real-world examples, interesting problems, application situations, or student investigations.

Connections

1   2   3   4

Important mathematical ideas are developed independently of each other (i.e., they are discrete, independent ideas).

Important mathematical ideas are developed by expanding and connecting to other important mathematical ideas in such a way as to build understanding of mathematics as a unified whole.

Rigor and Depth

1   2   3   4

Important mathematical ideas are applied in routine problems or in using formulated procedures, and are extended in separate / optional problems.

Important mathematical ideas are applied and extended in novel situations or embedded in the content, requiring the extension of important mathematical ideas and the use of multiple approaches.

Skills and Procedures:
Understanding the scoring

	Superficially Developed .... Well Developed
Development	**1 2 3 4** Skills and procedures are the primary focus, are developed without conceptual understanding, and are loosely connected to important mathematical ideas — important mathematical ideas are adjunct. Skills and procedures are integrated with important mathematical ideas and are presented as important tools in applying and understanding important mathematical ideas.
Connections	**1 2 3 4** Skills and procedures are treated as discrete skills rarely connected to important mathematical ideas or other skills and procedures. Skills and procedures are integrated with—and consistently connected to— important mathematical ideas and other skills and procedures.
Rigor and Depth	**1 2 3 4** Skills and procedures are practiced without conceptual understanding outside any context, do not require the use of important mathematical ideas, and are primarily practiced in rote exercises and drill. Skills and procedures are critical to the application and understanding of important mathematical ideas, and are embedded in problem situations.

Mathematical Relationships:
Understanding the scoring

	Superficially Developed ──────────────── Well Developed
Development	1　　　　　2　　　　　3　　　　　4 Mathematical relationships are not evident, and mathematics appears as a series of discrete skills and ideas.　　　　　Mathematical relationships are evident in such a way as to build understanding of mathematics as a unified whole.
Connections	1　　　　　2　　　　　3　　　　　4 Mathematical relationships are not required of students or are used primarily to provide a context for the practice of skills or procedures — words wrapped around drill.　　　　　Mathematical relationships are integrated with important mathematical ideas, and are integral in required activities, problems, and applications.
Rigor and Depth	1　　　　　2　　　　　3　　　　　4 Mathematical relationships require the use of skills and procedures, but rarely require the use of any important mathematical ideas or connections outside mathematics.　　　　　Mathematical relationships require the broad use of mathematics and integrate the need for important mathematical ideas, skills, and procedures, as well as connections outside mathematics.

Documenting Alignment to the Standards for Mathematical Practice

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1. Make sense of problems and persevere in solving them.

Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

Indicate the chapter(s), section(s), or page(s) reviewed.

Portions of the mathematical practice that are missing or not well developed in the instructional materials (if any):

Summary/Justification/Evidence

Overall Rating

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 <|——————————+——————————+——————————+——|>
 1          2          3          4
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Documenting Alignment to the
Standards for Mathematical Practice

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2. Reason abstractly and quantitatively.

Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.

Indicate the chapter(s), section(s), or page(s) reviewed.

Portions of the mathematical practice that are missing or not well developed in the instructional materials (if any):

Summary/Justification/Evidence

Overall Rating

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  1        2        3        4
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Documenting Alignment to the
Standards for Mathematical Practice

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|---|
| 3. Construct viable arguments and critique the reasoning of others. |

Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

Indicate the chapter(s), section(s), or page(s) reviewed.

Portions of the mathematical practice that are missing or not well developed in the instructional materials (if any):

Summary/Justification/Evidence

Overall Rating

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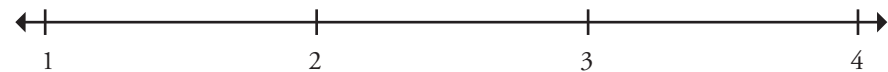
Documenting Alignment to the
Standards for Mathematical Practice

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4. Model with mathematics.

Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

Indicate the chapter(s), section(s), or page(s) reviewed.

Portions of the mathematical practice that are missing or not well developed in the instructional materials (if any):

Summary/Justification/Evidence

Overall Rating

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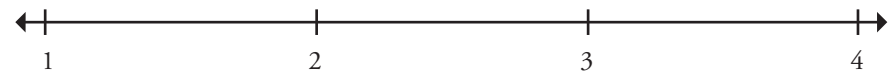
Documenting Alignment to the
Standards for Mathematical Practice

5. Use appropriate tools strategically.

Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.

Indicate the chapter(s), section(s), or page(s) reviewed.

Portions of the mathematical practice that are missing or not well developed in the instructional materials (if any):

Summary/Justification/Evidence

Overall Rating

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1        2        3        4
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Documenting Alignment to the Standards for Mathematical Practice

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6. Attend to precision.

Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.

Indicate the chapter(s), section(s), or page(s) reviewed.

Portions of the mathematical practice that are missing or not well developed in the instructional materials (if any):
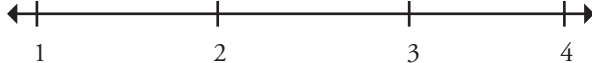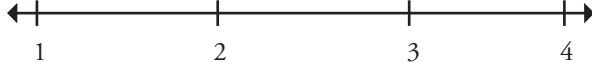
Summary/Justification/Evidence

Overall Rating

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 1          2          3          4
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Documenting Alignment to the Standards for Mathematical Practice

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7. Look for and make use of structure.

Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7×8 equals the well remembered $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property. In the expression $x^2 + 9x + 14$, older students can see the 14 as 2×7 and the 9 as $2 + 7$. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 - 3(x - y)^2$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y.

Indicate the chapter(s), section(s), or page(s) reviewed.

Portions of the mathematical practice that are missing or not well developed in the instructional materials (if any):

Summary/Justification/Evidence

Overall Rating

1   2   3   4

Documenting Alignment to the Standards for Mathematical Practice

8. Look for and express regularity in repeated reasoning.

Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through $(1, 2)$ with slope 3, middle school students might abstract the equation $(y - 2)/(x - 1) = 3$. Noticing the regularity in the way terms cancel when expanding $(x - 1)(x + 1)$, $(x - 1)(x^2 + x + 1)$, and $(x - 1)(x^3 + x2 + x + 1)$ might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.

Indicate the chapter(s), section(s), or page(s) reviewed.

Portions of the mathematical practice that are missing or not well developed in the instructional materials (if any):

Summary/Justification/Evidence

Overall Rating

1   2   3   4

ALGEBRA I — NUMBER AND QUANTITY (N)
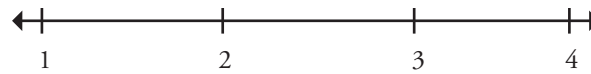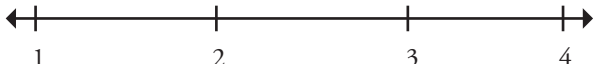
The Real Number System (N-RN)

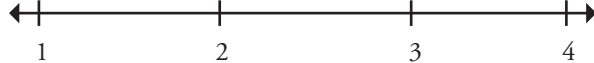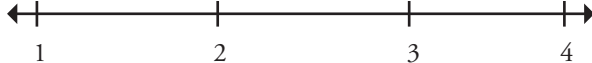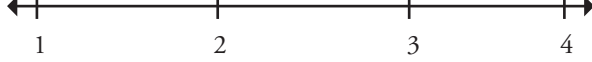| Extend the properties of exponents to rational exponents.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
N-RN.1 Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. *For example, we define $5^{1/3}$ to be the cube root of 5 because we want $(5^{1/3})^3 = 5^{(1/3)3}$ to hold, so $(5^{1/3})^3$ must equal 5.* **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas $\quad$ 1 $\quad$ 2 $\quad$ 3 $\quad$ 4 Skills and Procedures $\quad$ 1 $\quad$ 2 $\quad$ 3 $\quad$ 4 Mathematical Relationships $\quad$ 1 $\quad$ 2 $\quad$ 3 $\quad$ 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating $\quad$ 1 $\quad$ 2 $\quad$ 3 $\quad$ 4

ALGEBRA I — NUMBER AND QUANTITY (N)
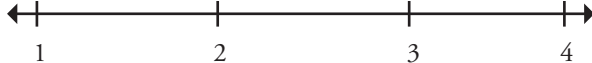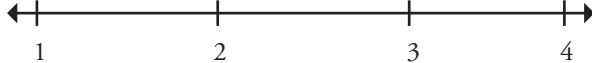
The Real Number System (N-RN)

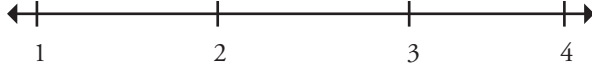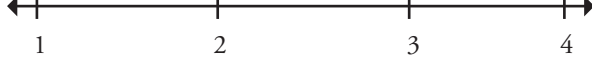| Extend the properties of exponents to rational exponents.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
N-RN.2 Rewrite expressions involving radicals and rational exponents using the properties of exponents. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 — 2 — 3 — 4 Skills and Procedures 1 — 2 — 3 — 4 Mathematical Relationships 1 — 2 — 3 — 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 — 2 — 3 — 4

ALGEBRA I — NUMBER AND QUANTITY (N)
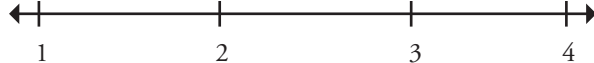
The Real Number System (N-RN)

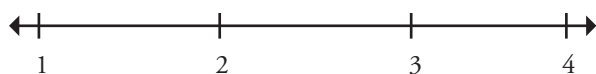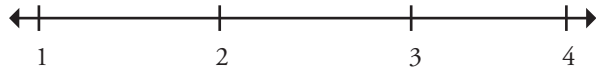| Use properties of rational and irrational numbers.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
N-RN.3 Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 2 3 4 Skills and Procedures 1 2 3 4 Mathematical Relationships 1 2 3 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 2 3 4

Reviewed By: _____

Title of Instructional Materials: _____

ALGEBRA I — NUMBER AND QUANTITY (N)

Quantities (N-Q)

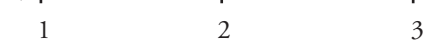| Reason quantitatively and use units to solve problems.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
N-Q.1 Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.* Note: Foundation for work with expressions, equations and functions. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 2 3 4 Skills and Procedures 1 2 3 4 Mathematical Relationships 1 2 3 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 2 3 4

ALGEBRA I — NUMBER AND QUANTITY (N)

Quantities (N-Q)

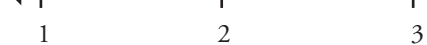| Reason quantitatively and use units to solve problems.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
N-Q.2 Define appropriate quantities for the purpose of descriptive modeling.* Note: Foundation for work with expressions, equations and functions. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 2 3 4 Skills and Procedures 1 2 3 4 Mathematical Relationships 1 2 3 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 2 3 4

ALGEBRA I — NUMBER AND QUANTITY (N)

Quantities (N-Q)

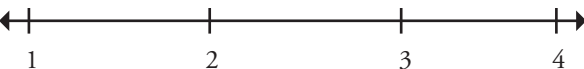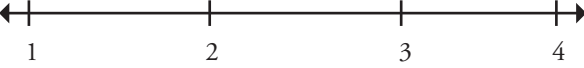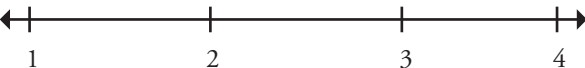| Reason quantitatively and use units to solve problems.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
N-Q.3 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.* Note: Foundation for work with expressions, equations and functions. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 —— 2 —— 3 —— 4 Skills and Procedures 1 —— 2 —— 3 —— 4 Mathematical Relationships 1 —— 2 —— 3 —— 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 —— 2 —— 3 —— 4

ALGEBRA I — ALGEBRA (A)

Seeing Structure in Expressions (A-SSE)

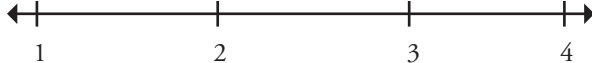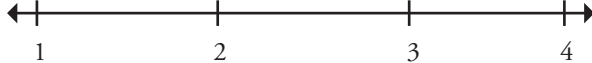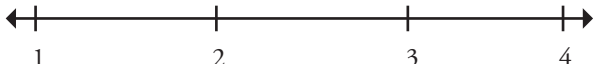| Interpret the structure of expressions.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
A-SSE.1a 1. Interpret expressions that represent a quantity in terms of its context.* a. Interpret parts of an expression, such as terms, factors, and coefficients. Note: Linear, exponential, quadratic. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 — 2 — 3 — 4 Skills and Procedures 1 — 2 — 3 — 4 Mathematical Relationships 1 — 2 — 3 — 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 — 2 — 3 — 4

ALGEBRA I — ALGEBRA (A)

Seeing Structure in Expressions (A-SSE)

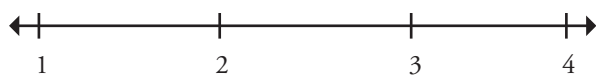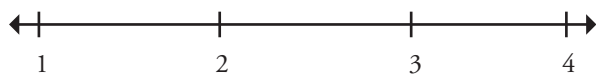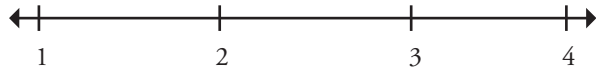| Interpret the structure of expressions.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
A-SSE.1b 1. Interpret expressions that represent a quantity in terms of its context.* b. Interpret complicated expressions by viewing one or more of their parts as a single entity. *For example, interpret P(1+r)ⁿ as the product of P and a factor not depending on P*. Note: Linear, exponential, quadratic. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 2 3 4 Skills and Procedures 1 2 3 4 Mathematical Relationships 1 2 3 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 2 3 4

ALGEBRA I — ALGEBRA (A)

Seeing Structure in Expressions (A-SSE)

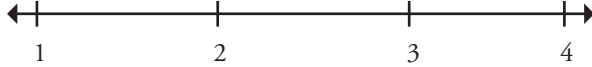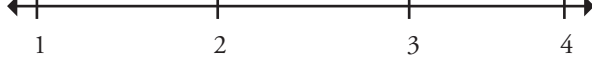| Interpret the structure of expressions.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
A-SSE.2 Use the structure of an expression to identify ways to rewrite it. *For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$, thus recognizing it as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$.* Note: Linear, exponential, quadratic. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas $\quad$ 1 $\quad$ 2 $\quad$ 3 $\quad$ 4 Skills and Procedures $\quad$ 1 $\quad$ 2 $\quad$ 3 $\quad$ 4 Mathematical Relationships $\quad$ 1 $\quad$ 2 $\quad$ 3 $\quad$ 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating $\quad$ 1 $\quad$ 2 $\quad$ 3 $\quad$ 4

ALGEBRA I — ALGEBRA (A)

Seeing Structure in Expressions (A-SSE)

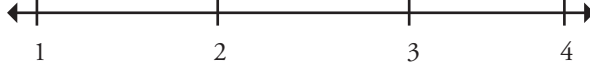| Write expressions in equivalent forms to solve problems.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
A-SSE.3a 3. Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.* a. Factor a quadratic expression to reveal the zeros of the function it defines. Note: Quadratic and exponential. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 2 3 4 Skills and Procedures 1 2 3 4 Mathematical Relationships 1 2 3 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 2 3 4

ALGEBRA I — ALGEBRA (A)

Seeing Structure in Expressions (A-SSE)

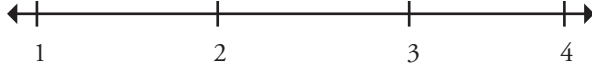| Write expressions in equivalent forms to solve problems.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
A-SSE.3b 3. Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.★ b. Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines. Note: Quadratic and exponential.	Important Mathematical Ideas 1 2 3 4 Skills and Procedures 1 2 3 4 Mathematical Relationships 1 2 3 4 **Summary / Justification / Evidence**
Indicate the chapter(s), section(s), and/or page(s) reviewed.	**Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):**
	Overall Rating 1 2 3 4

ALGEBRA I — ALGEBRA (A)

Seeing Structure in Expressions (A-SSE)

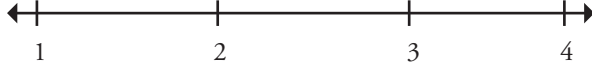| Write expressions in equivalent forms to solve problems.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
A-SSE.3c 3. Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.* c. Use the properties of exponents to transform expressions for exponential functions. *For example the expression* 1.15^t *can be rewritten as* $(1.15^{1/12})^{12t} \approx 1.012^{12t}$ *to reveal the approximate equivalent monthly interest rate if the annual rate is 15%.* Note: Quadratic and exponential. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 2 3 4 Skills and Procedures 1 2 3 4 Mathematical Relationships 1 2 3 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 2 3 4

ALGEBRA I — ALGEBRA (A)

Arithmetic with Polynomials and Rational Expressions (A-APR)

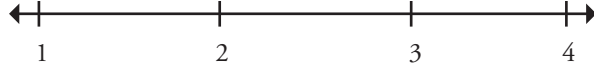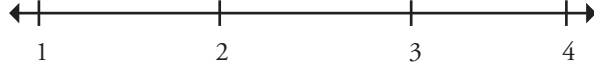| Perform arithmetic operations on polynomials.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
A-APR.1 Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials. Note: Linear and quadratic. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 2 3 4 Skills and Procedures 1 2 3 4 Mathematical Relationships 1 2 3 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 2 3 4

ALGEBRA I — ALGEBRA (A)

Creating Equations (A-CED)

Create equations that describe numbers or relationships.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
A-CED.1 Create equations and inequalities in one variable and use them to solve problems. *Include equations arising from linear and quadratic functions, and simple rational and exponential functions.** Note: Linear, quadratic, and exponential (integer inputs only). **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 2 3 4 Skills and Procedures 1 2 3 4 Mathematical Relationships 1 2 3 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 2 3 4

ALGEBRA I — ALGEBRA (A)

Creating Equations (A-CED)

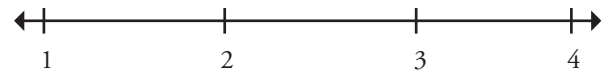| Create equations that describe numbers or relationships.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
A-CED.2 Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.* Note: Linear, quadratic, and exponential (integer inputs only). **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas $\longleftrightarrow$ 1 2 3 4 Skills and Procedures $\longleftrightarrow$ 1 2 3 4 Mathematical Relationships $\longleftrightarrow$ 1 2 3 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating $\longleftrightarrow$ 1 2 3 4

ALGEBRA I — ALGEBRA (A)

Creating Equations (A-CED)

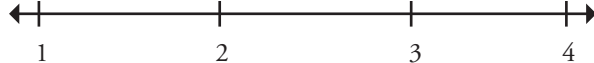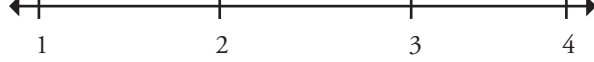| Create equations that describe numbers or relationships.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
A-CED.3 Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context. *For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.** Note: Linear (integer inputs only). **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 —— 2 —— 3 —— 4 Skills and Procedures 1 —— 2 —— 3 —— 4 Mathematical Relationships 1 —— 2 —— 3 —— 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 —— 2 —— 3 —— 4

ALGEBRA I — ALGEBRA (A)

Creating Equations (A-CED)

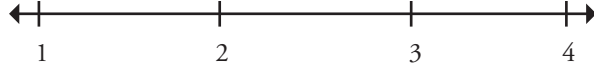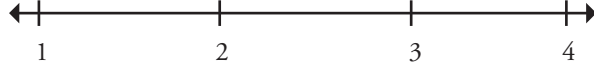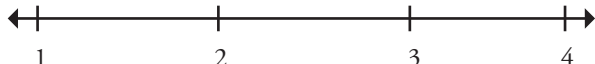| Create equations that describe numbers or relationships.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
A-CED.4 Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. *For example, rearrange Ohm's law V = IR to highlight resistance R.*★ Note: Linear, quadratic, and exponential (integer inputs only). **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 2 3 4 Skills and Procedures 1 2 3 4 Mathematical Relationships 1 2 3 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 2 3 4

ALGEBRA I — ALGEBRA (A)

Reasoning with Equations and Inequalities (A-REI)

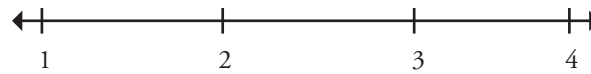| Understand solving equations as a process of reasoning and explain the reasoning.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
A-REI.1 Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method. Note: Master linear; learn as general principle. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 —— 2 —— 3 —— 4 Skills and Procedures 1 —— 2 —— 3 —— 4 Mathematical Relationships 1 —— 2 —— 3 —— 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 —— 2 —— 3 —— 4

ALGEBRA I — ALGEBRA (A)

Reasoning with Equations and Inequalities (A-REI)

Solve equations and inequalities in one variable.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
A-REI.3 Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. Note: Linear inequalities; literal that are linear in the variables being solved for; quadratics with real solutions. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1———2———3———4 Skills and Procedures 1———2———3———4 Mathematical Relationships 1———2———3———4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1———2———3———4

ALGEBRA I — ALGEBRA (A)

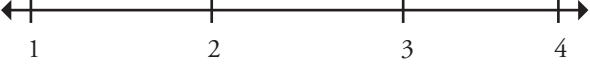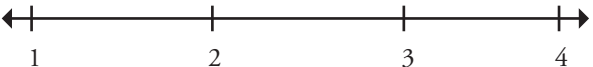**Reasoning with Equations and Inequalities (A-REI)**

Solve equations and inequalities in one variable.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
A-REI.4a 4. Solve quadratic equations in one variable. a. Use the method of completing the square to transform any quadratic equation in x into an equation of the form $(x - p)^2 = q$ that has the same solutions. Derive the quadratic formula from this form. Note: Linear inequalities; literal that are linear in the variables being solved for; quadratics with real solutions. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas $\longleftrightarrow$ 1 2 3 4 Skills and Procedures $\longleftrightarrow$ 1 2 3 4 Mathematical Relationships $\longleftrightarrow$ 1 2 3 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating $\longleftrightarrow$ 1 2 3 4

ALGEBRA I — ALGEBRA (A)

Reasoning with Equations and Inequalities (A-REI)

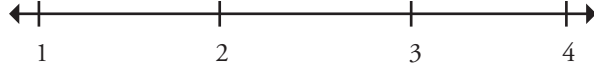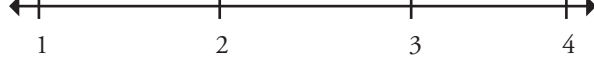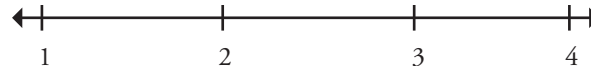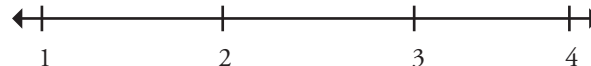| Solve equations and inequalities in one variable.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
A-REI.4b 4. Solve quadratic equations in one variable. b. Solve quadratic equations by inspection (e.g., for $x^2 = 49$), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as $a \pm bi$ for real numbers a and b. Note: Linear inequalities; literal that are linear in the variables being solved for; quadratics with real solutions. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 2 3 4 Skills and Procedures 1 2 3 4 Mathematical Relationships 1 2 3 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 2 3 4

ALGEBRA I — ALGEBRA (A)

Reasoning with Equations and Inequalities (A-REI)

Solve systems of equations.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
A-REI.5 Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions. Note: Linear-linear and linear-quadratic. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1———2———3———4 Skills and Procedures 1———2———3———4 Mathematical Relationships 1———2———3———4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1———2———3———4

ALGEBRA I — ALGEBRA (A)

Reasoning with Equations and Inequalities (A-REI)

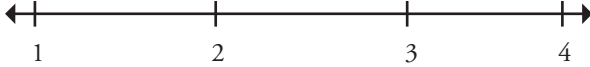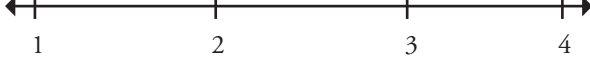| Solve systems of equations.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
A-REI.6 Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables. Note: Linear-linear and linear-quadratic. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 2 3 4 Skills and Procedures 1 2 3 4 Mathematical Relationships 1 2 3 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 2 3 4

ALGEBRA I — ALGEBRA (A)

Reasoning with Equations and Inequalities (A-REI)

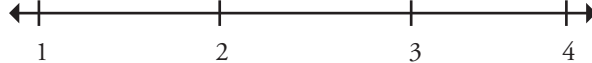| Solve systems of equations.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
A-REI.7 Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically. *For example, find the points of intersection between the line y = –3x and the circle $x^2 + y^2 = 3$.* Note: Linear-linear and linear-quadratic. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 2 3 4 Skills and Procedures 1 2 3 4 Mathematical Relationships 1 2 3 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 2 3 4

ALGEBRA I — ALGEBRA (A)

Reasoning with Equations and Inequalities (A-REI)

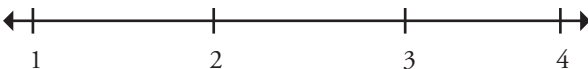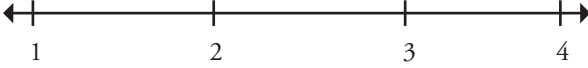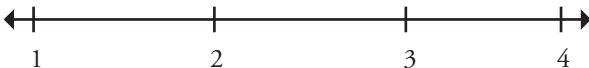| Represent and solve equations and inequalities graphically.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
A-REI.10 Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). Note: Linear and exponential; learn as general principle.	Important Mathematical Ideas 1 2 3 4 Skills and Procedures 1 2 3 4 Mathematical Relationships 1 2 3 4 **Summary / Justification / Evidence**
Indicate the chapter(s), section(s), and/or page(s) reviewed.	**Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):**
	Overall Rating 1 2 3 4

ALGEBRA I — ALGEBRA (A)

Reasoning with Equations and Inequalities (A-REI)

Represent and solve equations and inequalities graphically.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
A-REI.11 Explain why the *x*-coordinates of the points where the graphs of the equations *y = f(x)* and *y = g(x)* intersect are the solutions of the equation *f(x) = g(x)*; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where *f(x)* and/or *g(x)* are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.★ Note: Linear and exponential; learn as general principle. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 2 3 4 Skills and Procedures 1 2 3 4 Mathematical Relationships 1 2 3 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 2 3 4

ALGEBRA I — ALGEBRA (A)

Reasoning with Equations and Inequalities (A-REI)

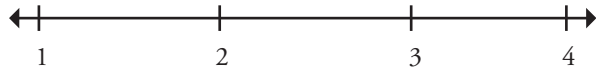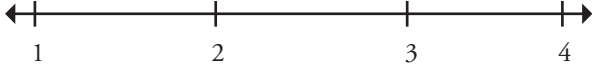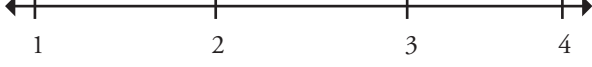| Represent and solve equations and inequalities graphically.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
A-REI.12 Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes. Note: Linear and exponential; learn as general principle. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 2 3 4 Skills and Procedures 1 2 3 4 Mathematical Relationships 1 2 3 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 2 3 4

ALGEBRA I — FUNCTIONS (F)
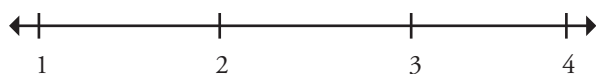
Interpreting Functions (F-IF)

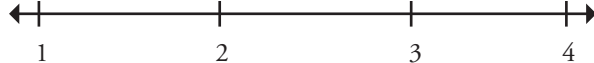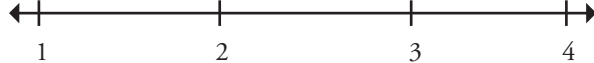| Understand the concept of a function and use function notation.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
F-IF.1 Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If *f* is a function and *x* is an element of its domain, then *f(x)* denotes the output of *f* corresponding to the input *x*. The graph of *f* is the graph of the equation *y = f(x)*. Note: Learn as general principle; focus on linear and exponential and on arithmetic and geometric sequences. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas $\xleftarrow{\hspace{1cm}}\!\!\!\!\begin{array}{cccc}1 & 2 & 3 & 4\end{array}\!\!\!\!\xrightarrow{\hspace{1cm}}$ 1 2 3 4 Skills and Procedures 1 2 3 4 Mathematical Relationships 1 2 3 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 2 3 4

ALGEBRA I — FUNCTIONS (F)

Interpreting Functions (F-IF)

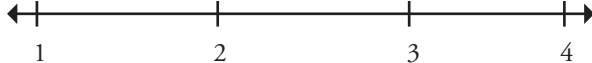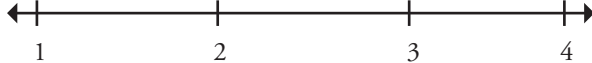| Understand the concept of a function and use function notation.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
F-IF.2 Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context. Note: Learn as general principle; focus on linear and exponential and on arithmetic and geometric sequences. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 —— 2 —— 3 —— 4 Skills and Procedures 1 —— 2 —— 3 —— 4 Mathematical Relationships 1 —— 2 —— 3 —— 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 —— 2 —— 3 —— 4

ALGEBRA I — FUNCTIONS (F)

Interpreting Functions (F-IF)

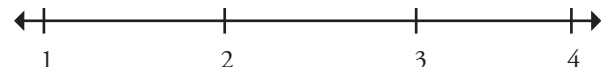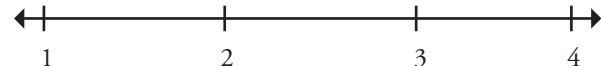| Understand the concept of a function and use function notation.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
F-IF.3 Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers. *For example, the Fibonacci sequence is defined recursively by f(0) = f(1) = 1, f(n+1) = f(n) + f(n-1) for n ≥ 1.* Note: Learn as general principle; focus on linear and exponential and on arithmetic and geometric sequences. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 —— 2 —— 3 —— 4 Skills and Procedures 1 —— 2 —— 3 —— 4 Mathematical Relationships 1 —— 2 —— 3 —— 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 —— 2 —— 3 —— 4

ALGEBRA I — FUNCTIONS (F)

Interpreting Functions (F-IF)

Interpret functions that arise in applications in terms of the context.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
F-IF.4 For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. *Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.* Note: Linear, exponential, and quadratic. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 2 3 4 Skills and Procedures 1 2 3 4 Mathematical Relationships 1 2 3 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 2 3 4

ALGEBRA I — FUNCTIONS (F)

Interpreting Functions (F-IF)

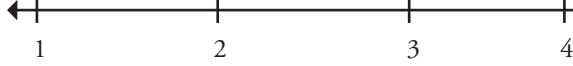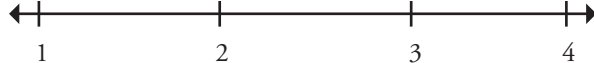| Interpret functions that arise in applications in terms of the context.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
F-IF.5 Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. *For example, if the function h(n) gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.** Note: Linear, exponential, and quadratic. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 2 3 4 Skills and Procedures 1 2 3 4 Mathematical Relationships 1 2 3 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 2 3 4

ALGEBRA I — FUNCTIONS (F)

Interpreting Functions (F-IF)

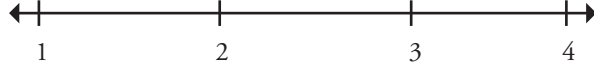| Interpret functions that arise in applications in terms of the context.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
F-IF.6 Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.* Note: Linear, exponential, and quadratic.	Important Mathematical Ideas 1———2———3———4 Skills and Procedures 1———2———3———4 Mathematical Relationships 1———2———3———4 **Summary / Justification / Evidence**
Indicate the chapter(s), section(s), and/or page(s) reviewed.	**Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):**
	Overall Rating 1———2———3———4

ALGEBRA I — FUNCTIONS (F)

Interpreting Functions (F-IF)

Analyze functions using different representations.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
F-IF.7a 7. Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.* a. Graph linear and quadratic functions and show intercepts, maxima, and minima. Note: Linear, exponential, quadratic, absolute value, step, piecewise-defined. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 2 3 4 Skills and Procedures 1 2 3 4 Mathematical Relationships 1 2 3 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 2 3 4

ALGEBRA I — FUNCTIONS (F)

Interpreting Functions (F-IF)

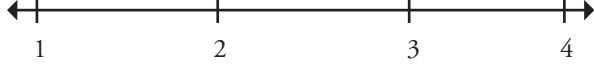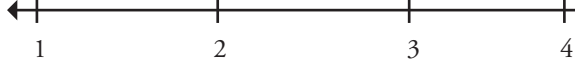| Analyze functions using different representations.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
F-IF.7b 7. Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.* b. Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions. Note: Linear, exponential, quadratic, absolute value, step, piecewise-defined. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1———2———3———4 Skills and Procedures 1———2———3———4 Mathematical Relationships 1———2———3———4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1———2———3———4

ALGEBRA I — FUNCTIONS (F)

Interpreting Functions (F-IF)

Analyze functions using different representations.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
F-IF.7e 7. Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.* e. Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude. Note: Linear, exponential, quadratic, absolute value, step, piecewise-defined. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas $\longleftrightarrow$ 1 2 3 4 Skills and Procedures $\longleftrightarrow$ 1 2 3 4 Mathematical Relationships $\longleftrightarrow$ 1 2 3 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating $\longleftrightarrow$ 1 2 3 4

Reviewed By: _____

Title of Instructional Materials: _____

ALGEBRA I — FUNCTIONS (F)
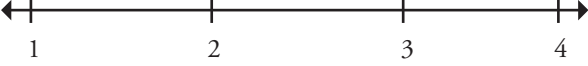
Interpreting Functions (F-IF)

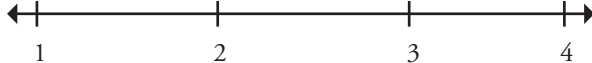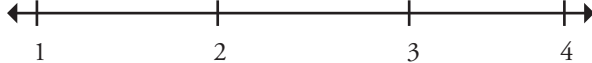| Analyze functions using different representations.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
F-IF.8a 8. Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. a. Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context. Note: Linear, exponential, quadratic, absolute value, step, piecewise-defined. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 2 3 4 Skills and Procedures 1 2 3 4 Mathematical Relationships 1 2 3 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 2 3 4

ALGEBRA I — FUNCTIONS (F)

Interpreting Functions (F-IF)

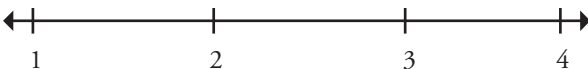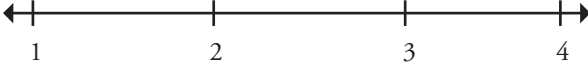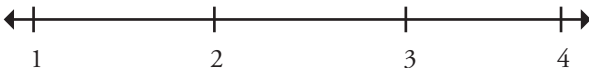| Analyze functions using different representations.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
F-IF.8b 8. Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. b. Use the properties of exponents to interpret expressions for exponential functions. *For example, identify percent rate of change in functions such as $y = (1.02)^t$, $y = (0.97)^t$, $y = (1.01)^{12t}$, $y = (1.2)^{t/10}$, and classify them as representing exponential growth or decay.* Note: Linear, exponential, quadratic, absolute value, step, piecewise-defined. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1———2———3———4 Skills and Procedures 1———2———3———4 Mathematical Relationships 1———2———3———4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1———2———3———4

ALGEBRA I — FUNCTIONS (F)

Interpreting Functions (F-IF)

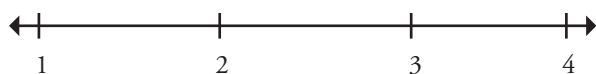| Analyze functions using different representations.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
F-IF.9 Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). *For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.* Note: Linear, exponential, quadratic, absolute value, step, piecewise-defined.	Important Mathematical Ideas 1——2——3——4 Skills and Procedures 1——2——3——4 Mathematical Relationships 1——2——3——4 **Summary / Justification / Evidence**
Indicate the chapter(s), section(s), and/or page(s) reviewed.	**Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):**
	Overall Rating 1——2——3——4

ALGEBRA I — FUNCTIONS (F)

Building Functions (F-BF)

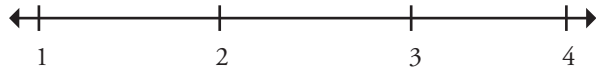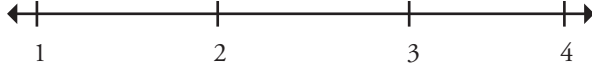| Build a function that models a relationship between two quantities.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
F-BF.1a 1. Write a function that describes a relationship between two quantities.* a. Determine an explicit expression, a recursive process, or steps for calculation from a context. Note: Linear, exponential, and quadratic. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 — 2 — 3 — 4 Skills and Procedures 1 — 2 — 3 — 4 Mathematical Relationships 1 — 2 — 3 — 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 — 2 — 3 — 4

ALGEBRA I — FUNCTIONS (F)

Building Functions (F-BF)

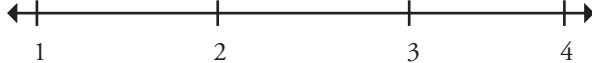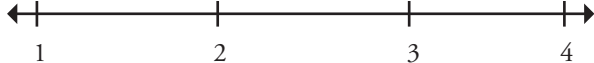| Build a function that models a relationship between two quantities.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
F-BF.1b 1. Write a function that describes a relationship between two quantities.* b. Combine standard function types using arithmetic operations. *For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model.* Note: Linear, exponential, and quadratic. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1———2———3———4 Skills and Procedures 1———2———3———4 Mathematical Relationships 1———2———3———4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1———2———3———4

ALGEBRA I — FUNCTIONS (F)

Building Functions (F-BF)

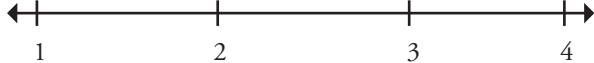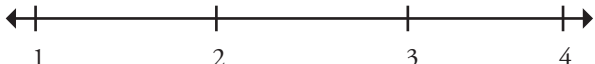| Build a function that models a relationship between two quantities.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.

F-BF.2
 	
Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms.*
 	
Note: Linear, exponential, and quadratic.
 	
Indicate the chapter(s), section(s), and/or page(s) reviewed.
	Important Mathematical Ideas $\longleftrightarrow$
	  1 2 3 4
	
	Skills and Procedures $\longleftrightarrow$
	  1 2 3 4
	
	Mathematical Relationships $\longleftrightarrow$
	  1 2 3 4
	
	Summary / Justification / Evidence

	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating $\longleftrightarrow$ 1 2 3 4

ALGEBRA I — FUNCTIONS (F)

Building Functions (F-BF)

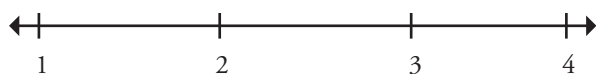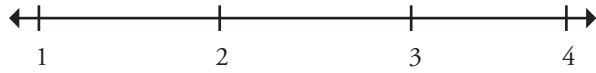| Build new functions from existing functions.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
F-BF.3 Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k\,f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. *Include recognizing even and odd functions from their graphs and algebraic expressions for them.* Note: Linear, exponential, quadratic, and absolute value. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 2 3 4 Skills and Procedures 1 2 3 4 Mathematical Relationships 1 2 3 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 2 3 4

ALGEBRA I — FUNCTIONS (F)

Building Functions (F-BF)

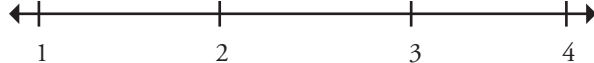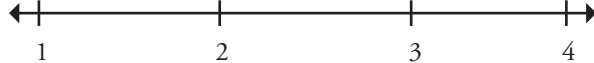| Build new functions from existing functions.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.

F-BF.4a
 	
4. Find inverse functions.
 	
    a. Solve an equation of the form $f(x) = c$ for a simple function f that has an inverse and write an expression for the inverse. *For example, f(x) =2 x³ or f(x) = (x+1)/(x−1) for x ≠ 1.*
 	
Note: Linear only.
 	
      Indicate the chapter(s), section(s), and/or page(s) reviewed.
	Important Mathematical Ideas
	
	`<----+--------+--------+-------->`
	  1 2 3 4
	
	Skills and Procedures
	
	`<----+--------+--------+-------->`
	  1 2 3 4
	
	Mathematical Relationships
	
	`<----+--------+--------+-------->`
	  1 2 3 4
	
	Summary / Justification / Evidence

	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating `<----+--------+--------+-------->` 1 2 3 4

ALGEBRA I — FUNCTIONS (F)

Linear, Quadratic, and Exponential Models (F-LE)

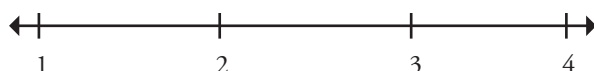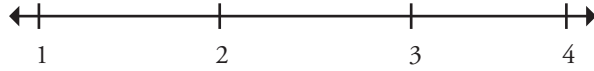| Construct and compare linear, quadratic, and exponential models and solve problems.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
F-LE.1a 1. Distinguish between situations that can be modeled with linear functions and with exponential functions. a. Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.* **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 2 3 4 Skills and Procedures 1 2 3 4 Mathematical Relationships 1 2 3 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any): Overall Rating 1 2 3 4

ALGEBRA I — FUNCTIONS (F)

Linear, Quadratic, and Exponential Models (F-LE)

Construct and compare linear, quadratic, and exponential models and solve problems.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
F-LE.1b 1. Distinguish between situations that can be modeled with linear functions and with exponential functions. b. Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.* **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 — 2 — 3 — 4 Skills and Procedures 1 — 2 — 3 — 4 Mathematical Relationships 1 — 2 — 3 — 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 — 2 — 3 — 4

ALGEBRA I — FUNCTIONS (F)

Linear, Quadratic, and Exponential Models (F-LE)

Construct and compare linear, quadratic, and exponential models and solve problems.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
F-LE.1c 1. Distinguish between situations that can be modeled with linear functions and with exponential functions. c. Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.* **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 2 3 4 Skills and Procedures 1 2 3 4 Mathematical Relationships 1 2 3 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any): Overall Rating 1 2 3 4

Reviewed By: _____
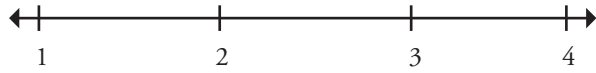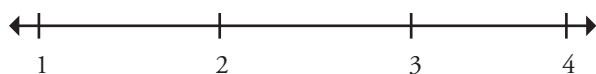
Title of Instructional Materials: _____

ALGEBRA I — FUNCTIONS (F)
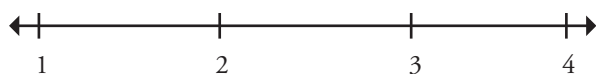
Linear, Quadratic, and Exponential Models (F-LE)

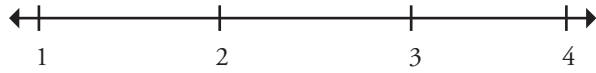| Construct and compare linear, quadratic, and exponential models and solve problems.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
F-LE.2 Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).* **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 2 3 4 Skills and Procedures 1 2 3 4 Mathematical Relationships 1 2 3 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 2 3 4

ALGEBRA I — FUNCTIONS (F)

Linear, Quadratic, and Exponential Models (F-LE)

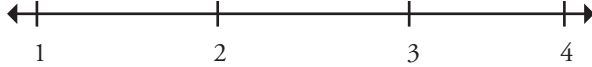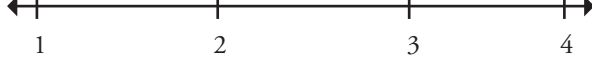| Construct and compare linear, quadratic, and exponential models and solve problems.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
F-LE.3 Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function.* **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 —— 2 —— 3 —— 4 Skills and Procedures 1 —— 2 —— 3 —— 4 Mathematical Relationships 1 —— 2 —— 3 —— 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 —— 2 —— 3 —— 4

ALGEBRA I — FUNCTIONS (F)

Linear, Quadratic, and Exponential Models (F-LE)

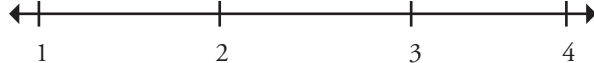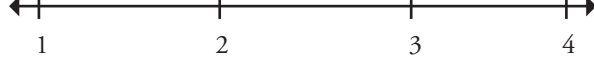| Interpret expressions for functions in terms of the situation they model.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
F-LE.5 Interpret the parameters in a linear or exponential function in terms of a context.* Note: Linear and exponential of form $f(x) = b^x + k$.	Important Mathematical Ideas 1 2 3 4 Skills and Procedures 1 2 3 4 Mathematical Relationships 1 2 3 4 **Summary / Justification / Evidence**
Indicate the chapter(s), section(s), and/or page(s) reviewed.	**Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):**
	Overall Rating 1 2 3 4

ALGEBRA I — STATISTICS AND PROBABILITY (S)

Interpreting Categorical and Quantitative Data (S-ID)

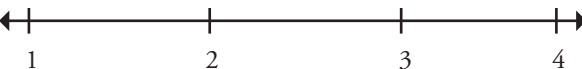| Summarize, represent, and interpret data on a single count or measurement variable.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
S-ID.1 Represent data with plots on the real number line (dot plots, histograms, and box plots). **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas $\quad$ 1 $\quad$ 2 $\quad$ 3 $\quad$ 4 Skills and Procedures $\quad$ 1 $\quad$ 2 $\quad$ 3 $\quad$ 4 Mathematical Relationships $\quad$ 1 $\quad$ 2 $\quad$ 3 $\quad$ 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating $\quad$ 1 $\quad$ 2 $\quad$ 3 $\quad$ 4

ALGEBRA I — STATISTICS AND PROBABILITY (S)

Interpreting Categorical and Quantitative Data (S-ID)

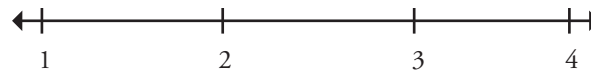| Summarize, represent, and interpret data on a single count or measurement variable.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
S-ID.2 Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 — 2 — 3 — 4 Skills and Procedures 1 — 2 — 3 — 4 Mathematical Relationships 1 — 2 — 3 — 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 — 2 — 3 — 4

ALGEBRA I — STATISTICS AND PROBABILITY (S)

Interpreting Categorical and Quantitative Data (S-ID)

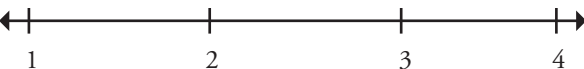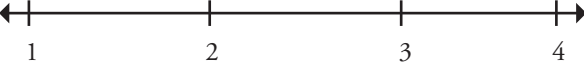| Summarize, represent, and interpret data on a single count or measurement variable.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
S-ID.3 Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers). **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas `1    2    3    4` Skills and Procedures `1    2    3    4` Mathematical Relationships `1    2    3    4` **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating `1    2    3    4`

ALGEBRA I — STATISTICS AND PROBABILITY (S)

Interpreting Categorical and Quantitative Data (S-ID)

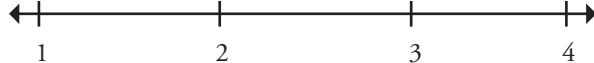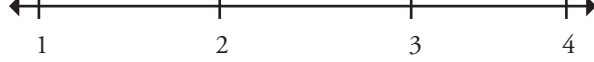| Summarize, represent, and interpret data on two categorical and quantitative variables.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
S-ID.5 Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data. Note: Linear focus; discuss general principle. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 2 3 4 Skills and Procedures 1 2 3 4 Mathematical Relationships 1 2 3 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 2 3 4

ALGEBRA I — STATISTICS AND PROBABILITY (S)

Interpreting Categorical and Quantitative Data (S-ID)

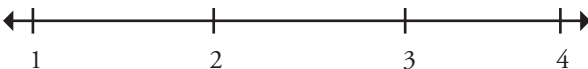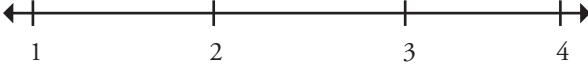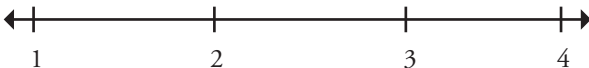| Summarize, represent, and interpret data on two categorical and quantitative variables.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
S-ID.6a 6. Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. a. Fit a function to the data; use functions fitted to data to solve problems in the context of the data. *Use given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models.* Note: Linear focus; discuss general principle. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 — 2 — 3 — 4 Skills and Procedures 1 — 2 — 3 — 4 Mathematical Relationships 1 — 2 — 3 — 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 — 2 — 3 — 4

ALGEBRA I — STATISTICS AND PROBABILITY (S)

Interpreting Categorical and Quantitative Data (S-ID)

Summarize, represent, and interpret data on two categorical and quantitative variables.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
S-ID.6b 6. Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. b. Informally assess the fit of a function by plotting and analyzing residuals. Note: Linear focus; discuss general principle. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 2 3 4 Skills and Procedures 1 2 3 4 Mathematical Relationships 1 2 3 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 2 3 4

ALGEBRA I — STATISTICS AND PROBABILITY (S)
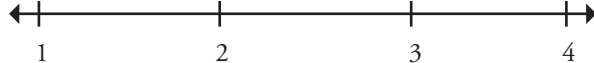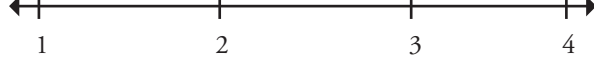
Interpreting Categorical and Quantitative Data (S-ID)

Summarize, represent, and interpret data on two categorical and quantitative variables.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
S-ID.6c 6. Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. c. Fit a linear function for a scatter plot that suggests a linear association. Note: Linear focus; discuss general principle. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 —— 2 —— 3 —— 4 Skills and Procedures 1 —— 2 —— 3 —— 4 Mathematical Relationships 1 —— 2 —— 3 —— 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 —— 2 —— 3 —— 4

ALGEBRA I — STATISTICS AND PROBABILITY (S)

Interpreting Categorical and Quantitative Data (S-ID)

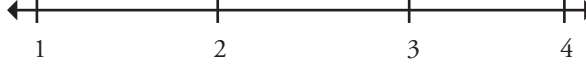| Interpret linear models.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
S-ID.7 Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 2 3 4 Skills and Procedures 1 2 3 4 Mathematical Relationships 1 2 3 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 2 3 4

ALGEBRA I — STATISTICS AND PROBABILITY (S)

Interpreting Categorical and Quantitative Data (S-ID)

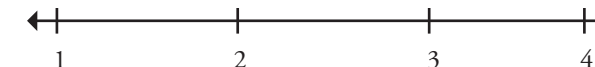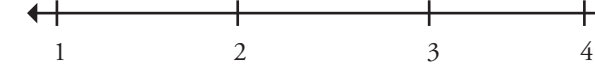| Interpret linear models.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
S-ID.8 Compute (using technology) and interpret the correlation coefficient of a linear fit. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas 1 2 3 4 Skills and Procedures 1 2 3 4 Mathematical Relationships 1 2 3 4 **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 2 3 4

ALGEBRA I — STATISTICS AND PROBABILITY (S)

Interpreting Categorical and Quantitative Data (S-ID)

Interpret linear models.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
S-ID.9 Distinguish between correlation and causation. **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas `1———2———3———4` Skills and Procedures `1———2———3———4` Mathematical Relationships `1———2———3———4` **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating `1———2———3———4`